

1 WHAT IS CLAIMED IS:

- 2 1. A method of modelling a communications network using a computer
3 system, the method including:
4 generating a network representation using computer-readable code, the
5 computer-readable code representing structured information;
6 parsing the network representation;
7 generating a network model using the parsed network representation,
8 the network model including a plurality of network objects and relationships
9 between the plurality of network objects; and
10 storing the network model in memory.
- 11 2. A method according to claim 1, further comprising processing a network
12 event using the network model, wherein processing the network event includes
13 identifying one or more of the plurality of network objects, and determining an
14 order of operation on the one or more of the plurality of network objects.
- 15 3. A method according to claim 1 wherein the network representation
16 includes at least one of the following:
17 circuit level index;
18 circuit type identification;
19 order of operation indication;
20 delete circuit identification;
21 underlying circuit index;
22 underlying link index;
23 delete object identification;
24 parent circuit identification; and
25 child circuit identification.
- 26 4. A method according to claim 2 wherein the network representation is
27 generated at startup.
- 28 5. A method according to claim 2 wherein the network representation is
29 generated at reconfiguration.
- 30 6. A method according to claim 2 wherein the network event comprises at
31 least one of provisioning, circuit provisioning, service provisioning, switch
32 provisioning, rollback, and delete.

- 1 7. A method according to claim 1 wherein the network model includes a
2 middleware bus.
- 3 8. A method according to claim 1 wherein the computer-readable code is in
4 extensible mark-up language (XML).
- 5 9. A method according to claim 2 wherein processing the network event
6 includes:
7 identifying one or more of the network objects in the network model; and
8 determining an order of operation on the one or more network objects.
- 9 10. A method according to claim 1, further including:
10 generating a graphical representation of the network model; and
11 displaying the graphical representation on a display monitor.
- 12 11. A method according to claim 10 wherein the graphical representation is
13 a graphical user interface, and wherein the graphical user interface is used to
14 modify the network model.
- 15 12. A method of modelling a communications network using a computer
16 system, the method including:
17 generating a network representation in extensible mark-up language
18 (XML);
19 parsing the network representation;
20 generating a network model using the parsed network representation,
21 the network model including a plurality of network objects and relationships
22 between the plurality of network objects;
23 storing the network model in memory; and
24 processing a network event using the network model, wherein
25 processing the network event includes identifying one or more of the plurality of
26 network objects, and determining an order of operation on the one or more of
27 the plurality of network objects.
- 28 13. A system for modelling a communications network, the system including:
29 one or more processors;
30 one or more memories coupled to the one or more processors; and

- 1 program instructions stored in the one or more memories, the one or
2 more processors being operable to execute the program instructions, the
3 program instructions including:
4 generating a network representation using computer-readable
5 code;
6 parsing the network representation;
7 generating a network model using the parsed network
8 representation, the network model including a plurality of network
9 objects; and
10 storing the network model in the one or more memories.
- 11 14. A system according to claim 13 wherein the computer-readable code is
12 in extensible mark-up language (XML).
- 13 15. A system according to claim 13 wherein the network representation is
14 generated at startup.
- 15 16. A system according to claim 13 wherein the network representation is
16 generated at reconfiguration.
- 17 17. A system according to claim 13 wherein the network model includes a
18 middleware bus.
- 19 18. A system according to claim 13 wherein the program instructions further
20 include:
21 generating a graphical representation of the network representation; and
22 displaying the graphical representation on a display monitor.
- 23 19. A system according to claim 18 wherein the graphical representation is a
24 graphical user interface, and wherein the graphical user interface is used to
25 modify the network model.
- 26 20. A system for modelling a communications network, the system including:
27 one or more processors;
28 one or more memories coupled to the one or more processors; and
29 program instructions stored in the one or more memories, the one or more
30 processors being operable to execute the program instructions, the program
31 instructions including:

- 1 generating a network representation in extensible markup
2 language (XML);
3 parsing the network representation;
4 generating a network model using the parsed network
5 representation, the network model including a plurality of network
6 objects and relationships between the plurality of network objects; and
7 processing a network event using the network model, wherein
8 processing the network event includes identifying one or more of the
9 plurality of network objects, and determining an order of operation on the
10 one or more of the plurality of network objects.
- 11 21. A system according to claim 20 wherein the network event is selected
12 from the group consisting of provisioning, rollback, and delete.
- 13 22. A system according to claim 20 wherein, to process the network event,
14 the program instructions further include:
15 identifying one or more of the network objects in the network model; and
16 determining an order of operation on the one or more network objects.
- 17 23. A computer program product for modelling a communications network,
18 the computer program product including a computer usable medium having
19 computer readable code embodied in the computer usable medium, the
20 computer readable code including instructions to:
21 generate a network representation, the network representation
22 representing structured information;
23 parse the network representation; and
24 generate a network model using the parsed network representation, the
25 network model including a plurality of network objects and relationships
26 between the plurality of network objects.
- 27 24. A computer program product according to claim 23, the computer
28 readable code further including instructions to process a network event using
29 the network model, wherein processing the network event includes identifying
30 one or more of the plurality of network objects, and determining an order of
31 operation on the one or more of the plurality of network objects.

1 25. A computer program product according to claim 23, the computer
2 readable code further including instructions to generate a graphical
3 representation of the network model; and display the graphical representation
4 on a display monitor.

5 26. A computer program product according to claim 25 wherein the
6 graphical representation is a graphical user interface, and wherein the
7 graphical user interface is used to modify the network model.

8 27. An apparatus for modelling a communications network using a computer
9 system, the apparatus including:

10 means for representing a plurality of network objects and relationships
11 between the plurality of network objects on the communications network;

12 means for generating a network model using the representing means,
13 the network model including the plurality of network objects and relationships
14 between the plurality of network objects on the communications network;

15 means for storing the network model; and

16 means for processing a network event using the network model.